

What is claimed is:

1. An electrostatic chuck having an insulation layer including a mount plane on which a wafer is mounted, an inner electrode provide in the insulation layer, and projecting portions protruded from the mount plane which include contact planes to be contacted to the wafer, wherein a backside gas is flowed in a space defined by the mount plane, the projecting portions, and the wafer under such a condition that the wafer is attracted to the mount plane so as to maintain a temperature uniformity of the wafer, comprising a construction such that a total amount of areas of the contact planes of the projecting portions is not less than 5% and not more than 10% with respect to an area of the inner electrode, and heights of the projecting portions are not less than 5 μm and not more than 10 μm .

2 The electrostatic chuck according to claim 1, wherein diameters of the projecting portions are not less than 1.0 mm and not more than 2.0 mm.

3. The electrostatic chuck according to claim 1, wherein the projecting portions are aligned side-by-side continuously.

4. A substrate processing apparatus wherein a predetermined process is applied to a plane of a substrate, comprising: a process chamber in which the predetermined process is performed; the electrostatic chuck set forth in claim 1 used for electrostatically attracting and holding the substrate at a predetermined position in the process chamber; and a power source for attracting used for electrostatically attracting the substrate to the electrostatic chuck.

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